

## ABSTRACT OF THE DISCLOSURE

A compound is provided for increasing the concentration of a parent androgen in a subject in vivo. The parent androgen has a skeletal structure including a 4 position and a 17 position. It has a  $17\beta$ -hydroxy group that includes a  $17\beta$ -hydroxy oxygen appended to the 17 position and a  $17\beta$ -hydroxy hydrogen appended to the 17 $\beta$ -hydroxy oxygen. The compound includes a substrate having the skeletal structure of the parent androgen, wherein the substrate includes a 4 position and a 17 position corresponding to the 4 and 17 positions respectively of the parent androgen. The substrate according to one aspect of the invention includes a carbon-carbon double bond at the 4 position. The skeletal structure of the parent androgen embodied in the substrate being selected from the group consisting of androst-4-ene-  
10 3 $\alpha$ ,17 $\beta$ -diol, androst-4-ene-3 $\beta$ ,17 $\beta$ -diol, and mixtures thereof, or estr-4-ene-3 $\alpha$ ,17 $\beta$ -diol, estr-4-ene-3 $\beta$ ,17 $\beta$ -diol, and mixtures thereof, or combinations of these. A  
15 promoiety is appended to the 17 $\beta$ -hydroxy oxygen of the substrate as a substitute for the hydroxy hydrogen of the parent androgen. The promoiety constitutes or includes an alkylcarbonate ester. Related methods are included as well.